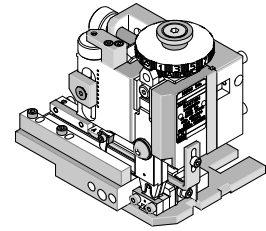**Mini-Mac Applicator Mechanical Feed-Metal Strip**

molex®

Application Tooling Specification Sheet

Order No. 63881-4600

FEATURES

% Directly adapts to most crimp presses and automatic wire processors

% Applicator designed to industry-standard mounting and shut height of 135.80mm (5.346")

% Conductor and insulation rings allow quick adjustment for conductor and insulation crimp height change

% Quick set-up time; plus the crimp height, track and feed adjustments can be set without removing the applicator from the crimp press

SCOPE

Products: Insulkrimp™ Quick Disconnect Terminals Metal Strip, 14-16 AWG.

Testing

Mechanical

The tensile test, or pull test, is a means of evaluating the mechanical properties of the crimped connections. The following chart shows the UL and government specifications (MIL-T-7928) for various wire sizes. The tensile strength is shown in pounds and indicates the minimum acceptable force to break or separate the terminal from the conductor.

Color Code	Wire Size (AWG)	*UL - 486 A	*UL – 486 C	*UL – 310	*Military Class 2
Yellow	26	3	N/A	N/A	7
Yellow	24	5	N/A	N/A	10
Red	22	8	8	8	15
Red	20	13	10	13	19
Red	18	20	10	20	38
Blue	16	30	15	30	50
Blue	14	50	25	50	70
Yellow	12	70	35	70	110
Yellow	10	80	40	80	150
Red	8	90	45	N/A	225
Blue	6	100	50	N/A	300

*UL - 486 A - Terminals (Copper conductors only)
*UL - 486 C - Butt Splices, Parallel Splices, Closed End Connectors, and Wire Nuts
*UL - 310 - Quick Disconnects, Flag and Couplers
*Military Class 2- Military Approved Terminals only as listed

Product List

The following is a partial list of the product order numbers and their specifications that this tool is designed to run. Updates to this list are available on www.molex.com.

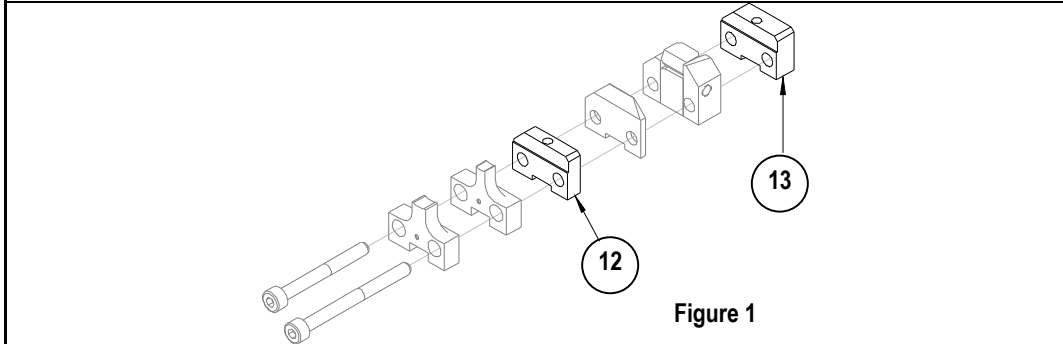| Terminal No.	Terminal Eng. No.	Wire Size		Insulation Diameter Maximum		Strip Length	
		AWG	mm²	mm	In.	mm	In.
19017-0070	BBZ-2132	14-16	2.00-1.30	3.70	.145	6.35	.250
19017-0071	BBZ-2135	14-16	2.00-1.30	3.70	.145	6.35	.250
19017-0072	BBZ-2138	14-16	2.00-1.30	3.70	.145	6.35	.250
19017-0073	BBZ-2138-032	14-16	2.00-1.30	3.70	.145	6.35	.250
Note: To process these terminals, assemble spacers with cutoff tooling as shown in Figure 1. See also parts list and assembly drawing.							

Figure 1

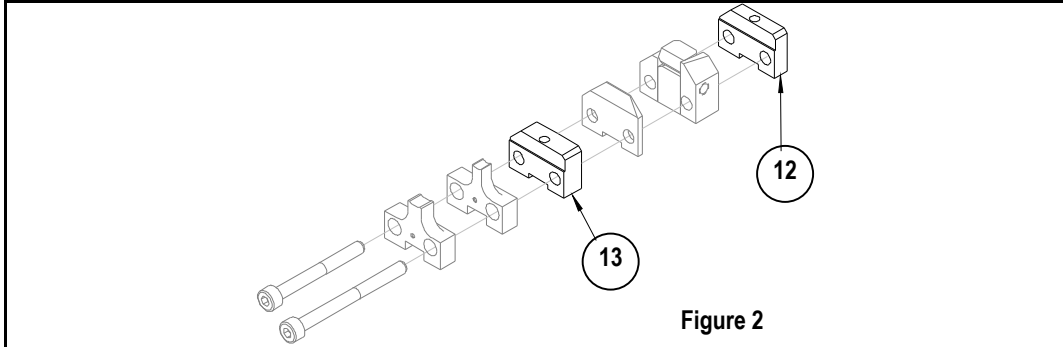| Terminal No.	Terminal Eng. No.	Wire Size		Insulation Diameter Maximum		Strip Length	
		AWG	mm²	mm	In.	mm	In.
19017-0074	BBZ-2141	14-16	2.00-1.30	3.70	.145	6.35	.250
19274-0004	BBZ-2141-LIF	14-16	2.00-1.30	3.70	.145	6.35	.250
Note: To process this terminal, assemble spacers with cutoff tooling as shown in Figure 2. See also parts list and assembly drawing.							

Figure 2

DEFINITION OF TERMS

The following illustrations are a generic terminal representation and not an exact image of any terminal listed in the scope.
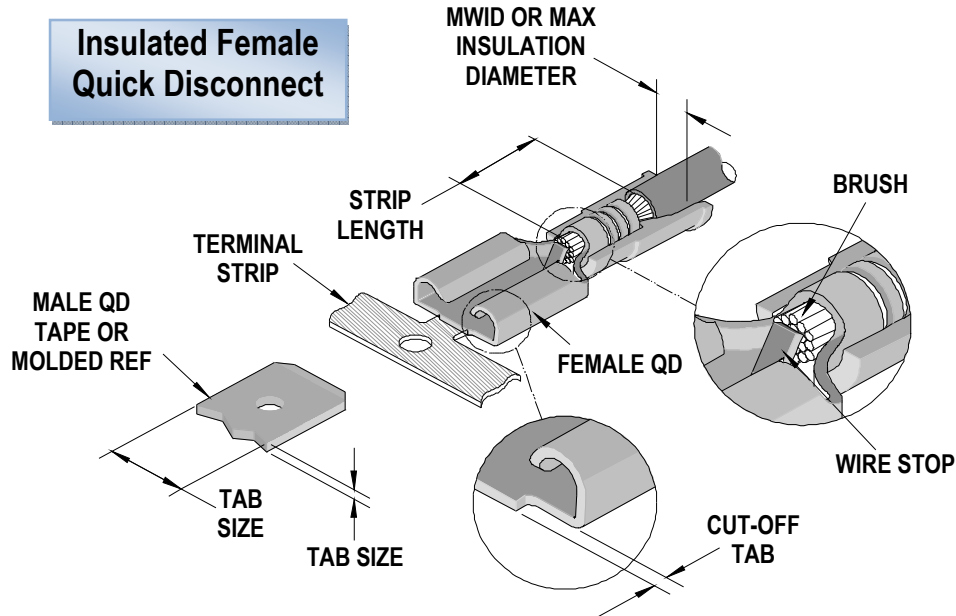
Insulated Female Quick Disconnect

MWID OR MAX INSULATION DIAMETER

BRUSH

STRIP LENGTH

TERMINAL STRIP

MALE QD TAPE OR MOLDED REF

FEMALE QD

WIRE STOP

TAB SIZE

TAB SIZE

CUT-OFF TAB

Figure 3

CRIMP SPECIFICATIONS

Wire Size		"X" Dimension Conductor Crimp						Pull Force Minimum	
AWG	mm²	Mean		Go		No Go		Lbs	N
		In	mm	In	mm	In	mm		
16	1.30	.084	2.13	.081	2.06	.091	2.31	30.0	133.5
14	2.00	.084	2.13	.081	2.06	.091	2.31	50.0	222.6

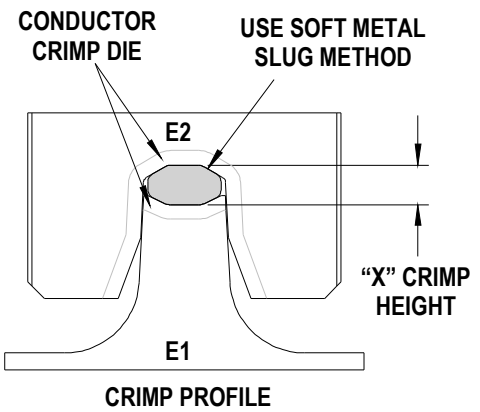| Terminal Series No.	Cut-off Tab Maximum	
	mm	In.
19017	0.25	.010
19274	0.25	.010

Tool Qualification Notes:
1. Pull Force should be measured with no influence from the insulation crimp.
2. The above specifications are guidelines to an optimum crimp.

Tool Calibration

To recalibrate this applicator, make sure the power is completely shut off on the press.

1. The Mini-Mac applicator must be properly installed in the press.
2. Crimping dies must be properly installed in the Mini-Mac applicator.
3. The recommended method of measuring the crimp height of the conductor dies is the soft metal slug method. See Figure 4.
4. The slug must have a diameter 0.51mm (.020") larger than the "X" No Go dimension before crimping.
5. Place the soft metal slug (solder) into the nest of the bottom die and crimp (by hand cycling the press) similar to a terminal. The crimp height can be measured with a blade type micrometer or dial caliper, (Dimension "X").
6. Adjustment of the crimp height can be accomplished by indexing the conductor cam. The letter "A" gives the loosest position and "K" gives the tightest position. A total adjustment of 0.50mm (.020") can be achieved by adjusting the conductor cam.

Note: If the crimp height is too tight on the setting "A", check the shut height of the press. See the Industrial Mini-Mac Applicator Manual Section 2.1 for adjustments.

CONDUCTOR CRIMP DIE

USE SOFT METAL SLUG METHOD

E2

"X" CRIMP HEIGHT

E1

CRIMP PROFILE

Use soft metal slug (solder) method to measure the "X" dimension. Verify tooling crimp height calibration by referring to the Go/No Go dimensions shown in the chart on page 3.

Figure 4

PARTS LIST

Mini-Mac Applicator 63881-4600				
Item	Order No	Engineering No.	Description	Quantity
Perishable Tooling				
63881-4670	63881-4670	63881-4670	Tool Kit (All "Y" Items)	REF
1	63465-0079	63465-0079	Conductor Punch	1 Y
2	63464-0068	63464-0068	Conductor Anvil	1 Y
3	63463-0046	63463-0046	Insulation Punch	1 Y
4	63462-0050	63462-0050	Insulation Anvil	1 Y
5	63466-0201	63466-0201	Cut-off Plunger Rear	1 Y
6	63466-0301	63466-0301	Rear Plunger Retainer	1 Y
7	63466-0002	63466-0002	Cut-Off Blade	1 Y
Other Components				
8	63466-0403	63466-0403	Cut-off Plunger Striker (Rear)	1
9	63466-0101	63466-0101	Scrap Chute	1
10	63700-0539	63700-0539	Cut-Off Plunger Spring	1
11	63443-0021	63443-0021	Lower Tooling Key	1
12	63466-1054	63466-1054	•Spacer (5.40mm)	1
13	63466-1075	63466-1075	•Spacer (7.50mm)	1
14	63466-0921	63466-0921	Terminal Stripping Blade	1
15	63600-1290	63600-1290	Washer	1
16	63890-0866	63890-0866	Collar-6.40 Long	1
17	63890-0867	63890-0867	Collar-7.70 Long	1
18	63801-4510	63801-4510	Terminal Guide Front	1
19	63600-0110	63600-0110	M4 Washer, 3mm Thick	1
Frame				
20	63801-3201	63801-3201	Mechanical Feed Applicator Frame Head	1
21	63801-3281	63801-3281	Base	1
22	63801-4550	63801-4550	Track Assembly	1
Hardware				
23	N/A	N/A	M4 by 10 Long SHCS	2**
24	N/A	N/A	M4 by 12 Long SHCS	1**
25	N/A	N/A	M4 by 20 Long SHCS	4**
26	N/A	N/A	M4 by 40 Long SHCS	1**
27	N/A	N/A	M4 by 45 Long SHCS	1**
28	N/A	N/A	M8 by 30 Long BHCS	1**
29	N/A	N/A	3mm by 6 Long Roll Pin	1**
** Available from an industrial supply company such as MSC (1-800-645-7270).				

● **See spacer assembly notes on page 2.**

Note: Crimp profiles used in 63881-4600 are equivalent to 19288-0104 / ATP-BB-275, (UL file number E79133).
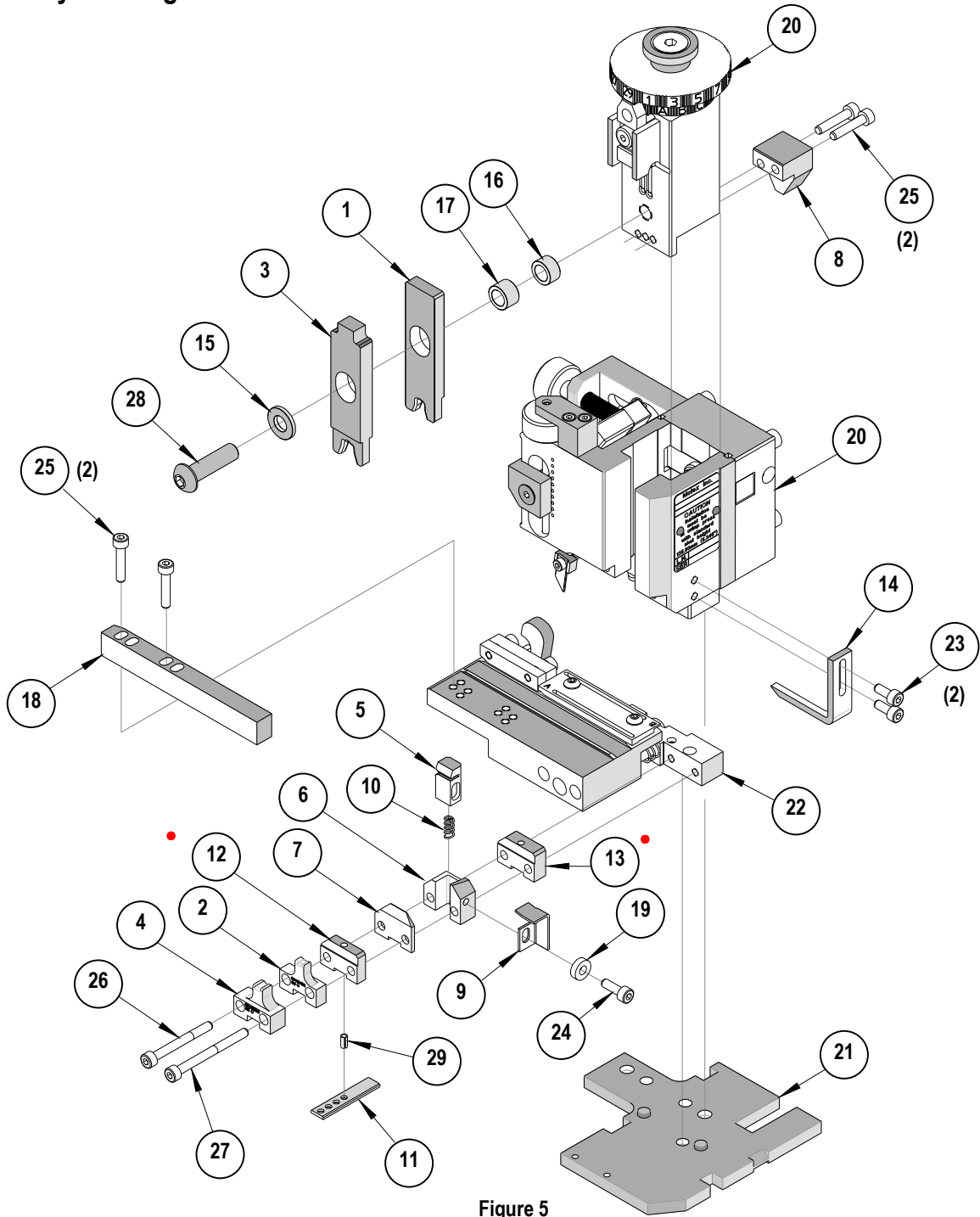
Assembly Drawing

Figure 5

• **See spacer assembly notes on page 2.**

NOTES

1. Molex recommends an extra perishable tooling kit be maintained at your facility.
2. Verify tooling alignment by manually cycling the press with applicator before crimping under power. Check that all screws are tight.
3. Slugs, terminals, dirt, and oil should be kept clear of work area.
4. Wear safety glasses at all times.
5. For recommended maintenance refer to the Mini-Mac Applicator Manual (Document no. 63880-0000).

CAUTION: This applicator should only be used in a press with a shut height of 135.80 mm (5.346"). Tooling damage could result at a lower setting.

CAUTION: To prevent injury, never operate this applicator without the guards supplied with the press or wire-processing machine in place. Reference the press or wire processing manufacturer's instruction manual.

CAUTION: Molex crimp specifications are valid only when used with Molex terminals, applicators and tooling.

Contact Information

For more information on Molex application tooling please contact Molex at 1-800-786-6539.

Visit our Web site at http://www.molex.com